

S/180/61/000/002/001/012
E073/E535

AUTHORS: Kochnov, V. Ye. and Zlochevskaya, I. I. (Chelyabinsk)
TITLE: On the Initial Stage of Plastic Deformation of Commercial Iron
PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1961, No.2, pp.60-63
TEXT: B. S. Kasatkin (Izv. AN SSSR, OTN, Metallurgiya i toplivo, 1959, No.5, 59) found that in the early stages of deformation ($\delta = 2-4\%$) slipping proceeds along numerous planes but only to a small extent. He identified three types of slip lines. N. S. Alferova et al. (Ref.2) obtained the first pictures of the surface of steel X18H9T (Kh18N9T), which was deformed at 700°C. In the work described in this paper the structure of the surface of low carbon steel specimens was investigated which was stretched at room temperature. Strips 10 to 12 mm wide, 0.5 mm thick of steel (0.07% C, 0.37% Mn, 0.08% Si, 0.04% Ni, 0.07% Cr) were reduced by means of a laboratory rolling stand to a thickness of 0.20 to 0.25 mm. After rolling, the strips were vacuum annealed at 700°C for 20 min and then subjected to slow cooling.

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The annealed specimens were etched in a 15% solution of sulphuric acid for the purpose of cleaning the surface from traces of oxides. Specimens 85 to 90 mm long, 6 mm wide were cut from etched strips and deformed with a critical reduction so as to obtain a coarse grain during the subsequent annealing. After this deformation, the specimens were polished in an electrolyte containing 88% orthophosphoric acid and 12% chromium anhydride. The polishing time was 4 to 5 min with a current intensity of 70 A/dm^2 and an electrolyte temperature of 30-40°C. For metal vacuum deposition, the polished specimens were heated at a vacuum of 10^{-4} mm Hg , with an electric current, to 900°C and held at that temperature for 5 to 6 min. During this time recrystallization took place and grain boundaries could be detected. The specimens were cooled by gradually reducing the intensity of the current flowing through them. Immediately after cooling, the specimens were stretched by the required value in a special rig. Prior to stretching, two thin transverse marks were made in the central part of the specimens spaced 18 to 22 mm apart. The accurate distance between the markings was measured with an accuracy of $\pm 0.001 \text{ mm}$. For

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studying the microstructure of the deformed metal by means of an electron microscope, a carbon film was deposited in vacuum and then removed after chemical dissolution of the metal. The carbon film is strong and permits obtaining a picture of the relief of the surface of the deformed metal with a sufficiently high accuracy. Optical microscopes did not reveal any visible changes in the microstructure of specimens stretched by 0.25%. However, electron microscopic investigation of the carbon replicas do reveal in some cases a change in the structure of the surface. Only in some sections of the surface is local deformation observed in the form of thin discontinuous slip traces with little contrast of varying widths (0.5-1 to 6-7 μ). Electron microscopic studies of the surface of specimens stretched by 0.25-4% showed a very uniform and local plastic deformation in the initial stage. In the case of medium deformation (0.25% for a 20 mm gauge length) elementary displacements occurred inside the grains. On increasing the deformation, the character of the displacement processes remains the same but rougher sliding traces occur, which are obviously localized in grain fragments, as can be seen from microphotographs, which are reproduced in the paper. The following conclusions are arrived at:

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1. Plastic deformation was observed in specimens of commercial iron subjected to stretching even if the deformation was in the elastic range;
2. initially deformation is localized in zones which become wider during the further progress of deformation;
3. deformed sections were observed in the neighbourhood of grain boundaries as well as in the body of the grain;
4. it is assumed that displacement of grains relative to each other is due to their change in shape in view of slipping along numerous planes, even if the magnitude of the slipping is very small.
There are 2 figures and 6 references; all Soviet.

SUBMITTED: November 10, 1960

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S/137/62/000/003/117/191
A060/A101

AUTHORS: Kochnov, V. Ye., Zlochevskaya, I. I.

TITLE: Electron-microscope study of the initial stage of plastic deformation of commercial iron

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 21, abstract 31126
("Sb. nauchno-tekhn. tr. N.-i. in-t metallurgii Chelyab. sovmarkhond"
1961, no. 3, 200 - 203)

TEXT: An electron-microscope study was carried out of the initial stage of plastic deformation of Fe containing 0.07% C, 0.37% Mn, 0.08% Si. Strips 10-12 mm wide were cut out of a 0.5 mm thick sheet, then they were rolled down to a thickness of 0.20 - 0.25 mm and thereupon annealed for 20 min at 700° in vacuum. After taking off the scale, specimens 85 - 90 mm long and 6 mm wide were cut out of the strips, then deformed by 6 - 8% and subjected to electrolytic polishing in phosphor-chrome electrolyte. The polished specimens underwent recrystallization annealing in a vacuum installation under current heating up to 800° C. After soaking at that temperature for 4 - 5 min the specimens were slowly cooled by reducing the current flowing through them. Immediately after the annealing the

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Electron-microscope study ...

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specimens were deformed by tension; the degree of deformation was determined from the distance between the lines specially marked on the surface of the specimen with a base distance of 18 - 22 mm. The electron-microscope investigations were carried out with the aid of carbon replicas separated out of the metal in a weak solution of HNO_3 . It is shown that specimens deformed by tension by 0.25 - 1.2% have a very nonuniform and local character of plastic deformation. In the initial stage (elongation by 0.25%) the plastic deformation occurs by slipping of comparatively thin layers with respect to each other by small distances. Such elementary shears occur along a large number of planes and at low degrees of deformation are localized in strips. The width of strips occupied by closely situated slip lines is not uniform and varies between the limits of 0.5 - 7 μ . The slip lines are oriented at various angles from 0° to 90° with respect to the grain boundaries. The strips originate not only in the neighborhood of grain boundaries, but also in the middle of grains. The hypothesis is announced that the site of arising and the region of spread of strips with thin slip lines is determined by a combination of local stresses in the specimen and the corresponding crystallographic planes. As the deformation increases, the number of elementary shears increases and at deformations of the order of 1 - 1.2% they already occupy a considerable part of the grain surface. The sites of

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termination of such sharper slip traces have a two-fold character: the slip traces either vanish smoothly with a necessary thinning down at the very end, or else they terminate abruptly at some boundary within the grain or an impurity. The conclusion is drawn that slip traces are, apparently, localized at grain fragments. The boundaries between the fragments may play a two-fold role: they may be the sources of the slip lines or, on the contrary, they may impede the development of slip over the grain. An analogous role is ascribed to impurities in the metal.

L. Gordiyenko

[Abstracter's note: Complete translation]

Card 3/3

KOCHNOV, V. Ya. (Chelyabinsk); GOL'DSHTEYN, V. Ya. (Chelyabinsk)

Kinetics of recrystallization of electrical steel during its annealing. Izv. AN SSSR, Otd. tekh. nauk. Met. i topl. no. 6: 61-66 N-D '62. (MIRA 16:1)

(Steel—Heat treatment)
(Crystallization)

S/126/62/014/005/004/015
E111/E435

AUTHORS: Zatsepin, S.V., Kochnov, V.Ye.

TITLE: Structure of slip lines

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.5, 1962,
673-677

TEXT: It is impossible to study with the electron microscope changes in the fine structure along slip lines because of their considerable length. An optical method for this purpose is described, based on the examination of the surface with dark-field illumination: the slip lines appear bright under these conditions. The relative extent of the brightness along the lines indicates differences in formation during deformation and enables the sizes of the fine slip lines and their development along the whole slip line to be evaluated. Deformation nonuniformity was observed not only in passing from grain to grain and within one grain but also along a slip line, this being particularly pronounced in "hatching" of the lines. As deformation increases the height of the shear steps in lines near grain boundaries decreases. In the central parts of the grains there

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Structure of slip lines

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is both a general decrease in the height of shear steps and the development in some lines of coarse slip for deformations up to 10%. The method was studied with type X 20-80 (Kh2CN80) nichrome, rolled, heat treated and cooled in vacuum and electropolished. There are 4 figures.

ASSOCIATION: Chelyabinskii nauchno-issledovatel'skiy institut metallurgii (Chelyabinsk Scientific Research Institute of Metallurgy)

SUBMITTED: February 13, 1962

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ZATSEPIN, S.V.; KOCHNOV, V.Ye.

Structure of slip bands. Fiz.met.i metalloved. 14 no.5:673-
677 N '62. (MIRA 15:12)

1. Chelyabinskij nauchno-issledovatel'skiy institut
metallurgii.
(Metallography) (Dislocations in metals)

BAYAZITOV, M.I.; KOCHNOV, V.I.

Investigating cold-rolled transformer steel by the internal
friction method. Fiz.met.i metalloved. 15 no.1:113-118 Ja '63.
(MIRA 16:2)

1. Chelyabinskij institut metallurgii.
(Sheet steel-Magnetic properties) (Internal friction)

KOCHNOV, V.Ye.; BAYAZITOV, M.I.

Solubility of nitrogen and carbon in cold-rolled transformer
steel. Fiz. met. i metalloved. 15 no.6:937-941 Je '63.

1. Chelyabinskij nauchno-issledovatel'skiy institut metallurgii.
(Steel—Inclusions) (Solubility) (MIRA 16:7)

KOCHNOV, V.Ye.; GERSHMAN, R.B.; BELIKOV, A.N.

Methods of revealing the substructure of metals. Fiz. met. i metall.-
ved. 16 no.1:152-155 J1 '63; (MIRA 16:9)

1. Chelyabinskii nauchno-issledovatel'skiy institut metallurgii.
(Metallography) (Metals—Pickling)

MOLOTILOV, B.V.; KOCHNOV, V.Ye.; MELIKOV, A.M.; GLRSHMAN, R.B.

Methods of revealing the substructure in electrical steel. *Stal'*
23 no.3:251-252 Mr '63. (MIRA 16:3)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii i Chelyabinskii nauchno-issledovatel'skiy institut
metallurgii.

(Iron-silicon alloys--Pickling)

KOCHNOV, V.Ia.; GOL'DSHTEYN, V.Ia.

Recrystallization stages in transformer steel. Pis. met. i
metalloved. 15 no.5:685-689 My '63. (MIRA 16:8)

1. Nauchno-issledovatel'skiy institut metallurgii, Chelyabinsk.
(Steel-Metallurgy) (Crystallization)

KOCHNOV, V.Ye.

Determination of oriented grains in alpha-iron from etching
figures. Zav. lab. 29 no.10:1205 '63. (MIRA 16:12)

1. Chelyabinskij nauchno-issledovatel'skiy institut metallurgii.

GERSHMAN, R.B., inzh.; GELIMOV, A.M., inzh.; KOCHINOV, V.Ye., inzh.;
GOL'DSHTEYN, V.Ya., inzh.; VASIL'YEVA, S.M.

Effect of a bond in electrical steel on its magnetic
properties. Elektrichesste no.11:62-63 N '63.

(MIRA 16:11)

1. Nauchno-issledovatel'skiy institut metallurgii,
Chelyabinsk.

ACCESSION NR: AP4029843

8/0279/64/000/002/0172/0176

AUTHOR: Zatsepin, S.V. (Chelyabinsk); Klochinskaya, I.I. (Chelyabinsk); Kochnev, V.Ye. (Chelyabinsk)

TITLE: The micro relief on the surface of nickel-chromium alloys during small plastic deformations

SOURCE: AN SSSR Izv. Metallurgiya i gornoye delo, no.2, 1964, 172-176

TOPIC TAGS: micro relief, Kh20N80 alloy, EI437B alloy, nickel based alloy, chromium containing alloy, plastic deformation, high temperature alloy, optical microscopy, electron microscopy, shear

ABSTRACT: The authors determined the behavior of this metal in an elastic-plastic region and, consequently, the beginning of the metal flow and its tendency toward plastic deformation. The purpose of the present work was to study the deformation reliefs of plastically-deformed high-temperature alloys at room temperatures and small degrees of deformation. The investigation was made by optical and electron microscopy on samples on Kh20N80 and EI437B alloys. Microphotographs of the surfaces of these alloys were presented which show various stresses and shears of the surface. The photographs of the micro-reliefs showed extremely nonuniform deforma-

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tion of grains in the initial stages of deformation. In most instances, the great magnitude of shears was observed within the grains. In the initial stages of deformation, no thin structure of the slip lines in the alloys under study was observed. The process of forming slip lines into bands can obviously occur due to the transition of the helical dislocations from one surface to the other, parallel to the initial. The strengthening phase leads to the decrease of the active systems and to an increase of shear along the slip planes. Orig. art. has: 5 figures.

ASSOCIATION: none

SUBMITTED: 17Jun63

DATE ACQ: 30Apr64

SUB CODES: ML

NO REV Sov: 002

ENCL: 00

OTHERS: 001

Cord 2/2

"APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000723520012-9

TOPIC TAGS: heat resistant alloy, crystallography, diffusion, diffusion
boundary, diffusion, diffusion

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"APPROVED FOR RELEASE: 09/18/2001

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APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000723520012-9"

KOCHNOV, V.Ye.

Effect of rapid cooling and subsequent heating on specific losses of cold-rolled electrical steel. Fiz. met. i metalloved. 18 no. 3:478-480 S '64. (MIRA 17:11)

1. Chelyabinskij nauchno-issledovatel'skiy institut metallurgii.

"APPROVED FOR RELEASE: 09/18/2001

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ENCL: 00

APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000723520012-9"

KOCHNOV, V.Ye.; ZVEREVA, V.A.; GERSHMAN, R.B.; VASIL'IEVA, S.M.

Formation and decomposition of austenite in cold-rolled transformer
steel. Pis. met. i metalloved. 19 no.6:926-929 Je '63. (MIRA 18,7)

1. Nauchno-issledovatel'skiy institut metallurgii, Chelyabinsk.

3
1-3192-66 EMP(0)/EWT(0)/ETP(0)/EMP(1)/T/EWT(1)/EMP(0)/EVA(0) JD/W/DJ/WB
ACC NR: AP5024999 SOURCE CODE: UR/0286/69/000/016/0012/0062

AUTHORS: Uvarov, V. Ya.; Glebov, Yu. P.; Zhuravlev, P. V.; Ternanek, M. Z.;
Rubin, Yu. L.; Zakharev, M. Y.; Lezhnev, G. F.; Sultamova, N. F.

ORG: none

TITLE: Lubricant for heat treatment of metals. Class 2), No. 17369 (Inventor
by the Organization of Moegorsovmashos (Organizatsiya moegorsovmashos))

SOURCE: Byulleten' isobreteniy i tehnicheskikh snakov, no. 16, 1963, 62

TOPIC TAGS: lubricant, metal heat treatment, mineral oil

ABSTRACT: This Author Certificate presents a mineral oil and graphite ^{additives} for heat treatment of metals. To prevent metals from sticking to the instruments, talcum and red lead are added to the lubricant. The talcum constitutes 10% by weight of the additive, and the red lead constitutes 8-25% by weight.

SUB CODE: FP/

SEARCH DATE: 06/14/64

EDD: 663.5

670/6763

Card 1/2

BALENKOVA, Ye.P.; ALYUKHA, A. Yu.; KOCHUROV, G.P.; KHVYCH, I.I.;
KAZANSKIY, B.A.

Catalytic conversations of cyclododecane in the presence of a
nickel catalyst. Neftekhimiia 4 n. 2 16-20. 1974
(K 14-2785)

1. Moskovskiy gosudarstvennyy universitet imeni V.P. Korzene-
sova, Kafedra khimii nefti.

KOCHNOVA, I. Ye. Dr. Med. Sci.

Dissertation: "The First Clinical-X-Ray Changes During the Initial Stage of Tuberculosis of the Lungs in Adults." First Moscow Order of Lenin Medical Inst.
14 Apr 47.

SO: Vechernaya Moskva, Apr, 1947 (Project #17836)

KOCHNOVA, I. Ye.

"Clinico-Roentgenological Examinations of the Development and Course of Pneumonia Foci in Normal Cases,"
Prob. Tuber., No. 2, 1949.

Cent. Sci. Res. Inst. Roentgenology & Radiology im. V. M. Molotov, Moscow

KOCHINOWA, L.Y., professor

Methods of teaching about tuberculosis. Sov.med. 21 no.1:94-95
Ja '57. (MIRA 10:6)

1. Iz kafedry tuberkulosa II Moskovskogo meditsinskogo instituta
imeni I.V.Stalina.

(TUBERCULOSIS, PULMONARY, educ.

mass auscultation methods & appar.)
(AUSCULTATION

mass auscultation methods & appar. for students
in lectures on tuberculosis)

Kochanova, I.Ye.

USSR/Pharmacology and Toxicology - Chemotherapeutic Preparations
Antitubercular Drugs. v-9

Abs Jour : Ref Zhur - Biol., No 14, 1953, 66422

Author : Kochanova, I.Ye.

Inst

Title : On the Importance of Drug Resistance in the Treatment of Patients with Pulmonary Tuberculosis.

Orig Pub : Sov. meditsina, 1957, No 6, 20-27.

Abstract : An investigation was made to see if drug resistant bacteria existed in the pathological material obtained from 105 patients with various forms of tuberculosis (T), who were treated with various preparations in different combinations and during periods of various duration. One hundred and twenty-six of them had chronic fibrinocavitory and hematogenous disseminated pulmonary T. On the basis of an analysis of the data from the literature and his own observations the author came to the conclusion that

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Chair of Tuberculosis, II Moscow Med Inst. I.V. Stalin

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520012-9"

USSR/Pharmacology and Toxicology - Chemotherapeutic Preparations
Antitubercular Drugs. v-9

Abs Jour : Ref Zhur - Biol., No 14, 1953, 66422

The problem of drug resistance in the clinical aspects of T is complex and contradictory, although resistance to drugs is of definite importance in the treatment of T; sometimes even in the presence of resistant bacteria the cure of T is possible with prolonged therapy. The author believes that in evaluating the indications for continuation of antibacterial therapy in the presence of drug-resistant tubercle bacteria, the clinician has to make a decision on the basis of the general condition of the patient. -- Bibliography with 16 titles. -- V.I. Pol'nik

Card 2/2

KOCHNOVA, I.Ye., prof.

Chemotherapy in early manifestations of tuberculosis. Sov.med. 21
no.9:18-26 8 '57.
(MIRA 11:1)

1. Iz knafdry tuberkulosa II Moskovskogo meditsinskogo instituta
imeni N.I.Pirogova.
(TUBERCULOSIS, PULMONARY, ther.
in early stage, follow-up)

KOCHNOVA, I.Ye., prof.; MIKHAYLOVA, G.N.; TROKHNOVA, V.R.; ROZMAINSKAYA, Z.N.; MALOVA, N.V.; KISLYAKOVA, N.V.

Tuberculosis vaccination in adult subjects with a positive tuberculin reaction. Sov.med. 23 no.12:58-63 D '59. (MIRA 13:4)

1. Is kafedry tuberkulosa (zaveduyushchiy - prof. I.Ye. Kochnova) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.
(BCG VACCINATION)

KOCHNOVA, I.Ye., prof.

Development of cavernous processes from lesser forms of tuberculosis;
according to data collected before antibacterial therapy and during
antibiotic and drug therapy. Sov. med. 24 no. 5:22-28 My '60.
(MIRA 13:10)

1. Is kafedry tuberkulosa II Moskovskogo meditsinskogo instituta
imeni N.I. Pirogova.
(TUBERCULOSIS)

KOCHNOVA, I.Ye., prof.

First All-Russian Congress of Pthysicologists. Sov. med. 24
no. 5:139-142 My '60. (MIR 13:10)
(TUBERCULOSIS—CONGRESSES)

KOCHNOVA, I.Ye., prof.; MAYAT, V.S., prof.

Treatment of tuberculosis of the skeletal muscles with antibacterial preparations. Sov.med. 25 no.8:47-52 Ag '60. (MIRA 13:9)

1. Is kafedry gospital'noy khirurgii i tuberkulosa II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.
(MUSCLES—TUBERCULOSIS)

KOCHNOVA, I.Xe., prof.; MAYAT, V.S., prof.

Thoracic hospitals in Great Britain; Sov.med. 25 no.2:110-113
P '61. (MIR 14:3)
(GREAT BRITAIN-HOSPITALS)

KOCHNOVA, I. Ye.; MIKHAYLOVA, O. N.

Results of treating tuberculosis with metazide. Khim. i med. no.14:
56-64 '60. (MIRA 14:12)

1. Kafedra tuberkulosa (zav. - prof. I. Ye. Kochnova) II Moskovskogo
meditsinskogo instituta imeni N. I. Pirogova.
(TUBERCULOSIS) (METAZIDE)

KOCHNOVA, I.Ye., prof.; MAYAT, V.S., prof.

"X-ray diagnosis of calcification and heterogenetic ossification"
by V.A.D'achenko. Reviewed by I.E. Kochnova and V.S.Mayat. Sov.
med. 25 no.1:154-155 Ja '62. (MIRA 15:4)

(OSSIFICATION) (CALCIFICATION) (DIAGNOSIS, RADIOSCOPIC)
(D'ACHENKO, V.A.)

KOCHNOVA, I. Ye., prof.; MAYAT, V. S., prof.

Pathogenic, diagnostic and therapeutic problems in tuberculosis
of the frontal bone. Khirurgia 38 no.5:77-81 My '62.
(MIRA 15:6)

1. Is kliniki ftisiatrii i gospital'noy khirurgii II Moskovskogo
meditsinskogo instituta imeni N. I. Pirogova.

(FRONTAL BONE—TUBERCULOSIS)

BOGDAN
KUDINOV, I.Ye., prof.; SEMENOV, A.D., prof.; YEVDOKIMOV, A.D., dotsent;
RAZUMOVSKAYA, V.F., kand.med.nauk; TRIFONOVA, T.M.

Second All-Russian Conference of Phthisiologists. Sovet. med.
27 n^o.9:134-137 8'63 (MIRA 1762)

KOCHNOVA, I.Ye., prof.; ROMASHKINA, Z.S.; YABLOKOVA, T.B., kand. med. nauk; KOZHEVNIKOVA, T.P.

Diagnostic value of the tuberculin "mark" in the examination of adults for tuberculosis. Sov. med. 26 no.4:82-86 (MIRA 17:2) Ap '63.

1. Is kafedry tuberkulosa (sav. - prof. I.Ye. Kochnova) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova i Kontrol'nogo instituta meditsinskikh biologicheskikh preparatov imeni L.A. Tarasevicha.

NAVAR, V.S., prof. KOZINOV, I.Ye., prof.

Development and course of pulmonary arteriosclerosis. Khirurgika
49 no.4 107-110 Ap '64 (CIA 1811)

1. Kafedra gosпитальной хирургии и курортной терапии II
Московского медицинского института им. П.И. Бирюкова.

KOCHNOVA, I.Ye., prof.; TRIFONOVA, T.M., dotsent; PAVLENOKAYA, V.F.

Seventh All-Union Congress of Phthisiatrists. Sov. med. 28
no.6:144-147 Je '65. (MIRA 18:8)

KOCHNOVA, I.Ya., prof. (Moskva)

Achievements and tasks of tuberculosis control at the present stage. Sov.med. 28 no.12:3-9 D '65.

(MIRA 18:12)

KOCHNOVA, O.I.

Children in the drug store. Zdrav'ye 6 no.4:30 Ap '60,
(MIRA 13:8)
(VITAMINS)

KOCHNOVA, O.I.

Medicine bottle labels. Zidrov'e 6 no.7:31 Je '60.

(MIRA 13:7)

(LABELS)

KOCHNOVA, O.I.

Old prescriptions. Zdorov'e 7 no. 2:31 F '61. (MIRA 14:2)
(MEDICINE—FORMULAE, RECEIPTS, PRESCRIPTIONS)

KOCHNOVA, O.I.

Bactericidal leukoplast. Zdrov'e 7 no.6:31 Je '61. (MIRA 14:7)
(PLASTERS (PHARMACY))

KOCHNOVA, O.I.

A convenient bandage. Zdorov's 8 no. 3131 Mr '62.
(BANDAGES AND BANDAGING) (MIRA 1514)

SOROKIN, M.P.; KOCHNOVA, Z.A.

Polymers of glycidic ethers. Report No.4: Obtaining polymers of alkyl glycidic ethers in the presence of basic catalysts. Lako-kras.mat. i ikh prim. no.4:6-9 '62. (MIRA 16:11)

SOROKIN, M.P.; KOCHNOVA, S.A.; SHODE, L.G.; MIKHAYLOVA, L.S.

Polymers of glycidol ethers. Lakokras.mat.1 ikh.prin.
no.3:4-12 '62. (MIRA 15:7)
(Protective coatings)
(Glycidol)

SOROKIN, M.P., KOCHNOVA, Z.A.

Polymerisation of α -oxide compounds; review of literature.
Lakokras.mat.i 1kh prim. no.5:89-96 '62. (MIRA 16:1)
(Oxides) (Polymerization)

KOCHNOVA, Ye. I., prof.

The 17th International Conference on Tuberculosis. Sov. med. 27 no.
3:147-149 Mr '64.
(MIRA 17:11)

L 9839-61
EW/WW/MAY

EPR/EWP(j)/EPP(c)/EWT(n)/BDS--APPIC/ASD--Pn-J/Pc-J/Pr-J--

ACCESSION NR: AP3000395

8/0191/63/000/005/0011/0014

AUTHOR: Sorokin, M. F.; Latov, V. K.; Korkishko, Zh. T.; Kochnova, Z. A. 73

TITLE: Copolymers of unsaturated ethers of glycidol. 1 Copolymerization of methyl methacrylate with allylglycidyl ethers in solutions

SOURCE: Plasticheskiye massy, no. 5, 1963, 11-14

TOPIC TAGS: copolymerization, methyl methacrylate, 2-propenyl 2,3-epoxypropyl, copolymerization rate, reaction temperature, initiator concentration, reactivity ratios, yields, molecular weight, benzoyl peroxide

ABSTRACT: Methyl methacrylate (MMA) and 2-propenyl 2,3-epoxypropyl ether (PEPE) have been copolymerized in methyl ethyl ketone, dioxane, or toluene solution at 70 to 90°C in the presence of 0.5 to 1.0 mol% of benzoyl peroxide or Alpha,Alpha-azobisisobutyronitrile. The reaction was conducted under nitrogen in solutions whose initial concentration of the monomers was 30%, with MMA and PEPE in ratios of 2:1, 1:1, and 1:2. The copolymerization rate dropped with an increase in the PEPE content and increased with an increase

Card 1/2

L 9839-63
ACCESSION NR: AP3000395

in the reaction temperature or initiator concentration. Because MNA is much more reactive than PEPE, the MNA-PEPE ratio in the copolymers is much higher than that in the initial monomer mixture. The monomer reactivity ratios were calculated to be 40.7 for MNA and 0.035 for PEPE. The copolymers, obtained in yields of 41 to 86%, are white solids readily soluble in benzene, toluene, acetone, or dioxane. Their molecular weights vary from 2000 to 10,000, decreasing with an increase in the initial PEPE concentration, reaction temperature, or initiator concentration. Copolymers prepared in dioxane solution have the highest molecular weight. Orig. art. has: 5 figures and 4 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 10Jun61 ENCL: 00

SUB CODE: 00 NO REF Sov: 000 OTHER: 011

Ja/ee
Card 2/2

ACCESSION NR: AP4034711

8/0303/64/000/002/0007/0010

AUTHORS: Sorokin, M. P.; Kochneva, S. A.; Korkishko, Zh. T.

TITLE: Two-component polyurethane lacquers on the base of glycidyl ester polymers, synthesized in the presence of two- and three-functional initiators

SOURCE: Lakokrasochnye materialy i ikh primeneniye, no. 2, 1964, 7-10

TOPIC TAGS: polyurethane lacquer, glycidyl ester, phenylglycidyl ester, butylglycidyl ester, glycidyl ester polymer, diisocyanate, triisocyanate, chemical film stability, lacquer film hardening, lacquer film adhesion

ABSTRACT: The base n-butylglycidyl ester polymer (BGE) and the phenylglycidyl ester polymer (PGE) were synthesized from the corresponding monomers by block polymerization at 90°C in the presence of the initiators resorcinol, trimethylolpropane, and NaOH. While 30% resorcinol yielded linear polymers of an average molecular weight of 570, the same amount of trimethylolpropane produced branched polymers of molecular weights within the 760-775 range. The BGE and PGE polymers so produced were used to make lacquers by being blended with toluilenediisocyanate (TD), with 4,4'-diphenylmethanediisocyanate (MD), or with 4,4',4"-triphenylmethanediisocyanate (MD). Since the hardening of films of such two-

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ACCESSION NR: AP4034711

component compositions is caused by the formation of urethanes, the authors performed a series of tests, using various NCO:OH ratios, temperatures, and reaction periods. It was found that at 90C satisfactorily hardened films with high physico-mechanical properties and good appearance were obtained by blending the glycidyl esters of linear structure with TMD, and by blending the polymers of branched structure with TD or DMD. It was also found that for blends of the linear PGE polymer with TMD the optimum ratio of NCO:OH was 1.3:1. This yielded (at 90C) a completely hardened film within 6-7 hours. For the branched BGE and PGE polymers, the optimal ratios of NCO:OH in their blends with DMD were 1.4:1 and 1.1:1, and the hardening periods were 1 and 3 hours respectively. A period of 16-20 hours was required for hardening films of the branched BGE polymer blended with TD at a NCO:OH ratio of 1.4:1. The hardness, adhesion, and resistance to chemical agents of the lacquer films proved them to be of high quality. O. A. Vasil'yeva participated in the work. Orig. art. has: 4 charts, 3 tables, and 3 formulas.

ASSOCIATION: none

SUBMITTED: 00

DATE REC: 20May64

ENCL: 00

SUB CODE: MT

NO RHF Sov: 004

ORDER: 006

Card 2/2

ACCESSION NR: AP4043819

8/0303/64/000/004/0001/0004

AUTHOR: Sorokin, M. F.; Kochnova, Z. A.; Korkishko, Zh. T.; Vasil'yeva, O. A.

TITLE: Premixed polyurethan coatings based on polymers of n-butyl- and phenylglycidyl ethers.

SOURCE: Lakokrasochnye materialy i ikh priznacheniye, no. 4, 1964. 1-4

TOPIC TAGS: premixed coating, prepolymer synthesis, cured film, chemically resistant coating, polymerized phenylglycidyl ether, polymerized n-butyl ether, toluylene diisocyanate, polyurethan, polyurethan film

ABSTRACT: Two types of prepolymers with isocyanate end groups were synthesized from linear or branched polymers of n-butyl or phenylglycidyl ethers and toluylene diisocyanate, using 30 mol. % trimethylolpropane or phenylglycidyl or resorcinol as initiators, respectively, to obtain premixed polyurethan coatings characterized by stability in storage. Two type-1 prepolymers were synthesized from the branched polymers at 60°C. Both the polymer and the diisocyanate were used as 50% solutions in xylene, the temperature of the exothermic reaction did not exceed 30°C, and the reaction was complete 1.5 hrs. after toluylene diisocyanate was added. Two type-2 prepolymers were synthesized at 70°C from

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ACCESSION NR: AP4043819

the linear polymers and type 1 prepolymers (substituting for the toluylene diisocyanate). The reaction was complete within 40 min. or 1 hr. 40 min. depending upon which prepolymer (based on n-butyl or phenylglycidyl ether) was added. All four prepolymers were then used as premixed polyurethane coatings, stored well when protected from moisture for 4 (type 1) or 1.5 (type 2) months, were highly resistant to 12 months' exposure in 10 or 20% solutions of NaOH, 5 or 10% solutions H₂SO₄, distilled water or transformer oil, and had excellent physical and mechanical properties (single coat 25 μ for type 1, 20-21 μ for type 2, two coats 50-52 and 45-46 μ , respectively, impact strength 50 kg.cm for all, relative hardness 0.72 - 1.00). Both types of coating were cured for 6 hrs. at 100C. Orig. art. has: 6 tables, 2 graphs, and numerous chemical formulas.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MT, 00

NO REF Sov: 001

OTHER: 002

Card 2/2

L 16038-65 EWT(m)/EXP(j)/T Pe-4 10
AP40476 1

5/0303/64/006, 003/0001/0003

AUTHOR: Sirokin, M. F., Korkishko, Zh T., Kochanova, Z.A.

15
The component polyurethane varnish has been synthesized and its properties

of resistance to organic solvents and to organic and inorganic acids

and bases (lacquer, polyurethane varnish, nitrogenous organic compounds, organic
acids, organic ester, polyacrylate, polyurethane, etc.) have been determined.

16
Tetrafunctional nitrogen-containing polyurethane compounds have been
synthesized and were shown to be soluble in organic solvents.

17
The properties of the synthesized polyurethane varnishes are given in the table.

18
The properties of the synthesized polyurethane varnishes are given in the table.

ACCESSION NR: AP4047671

Estimated. Formulas are given for calculating the number of atoms and weight of a sample of plutonium-239.

14. None

SUBMITTED: 00

ENCL: 00

SUB CODE: MT, OC

NO REF Sov: 005

OTHER: 002

Card 2/2

L 6016945 FWT(m)/EAP(j)/T Pe-A BM
ACCESSION NR: AP6016947

UR/0303/85/000/003/0032/1036
667.633.263.3

16

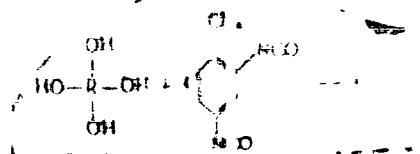
B

AUTHOR: Borodin, M. P.; Kichanova, Z. A.; Zhukova, L. B.

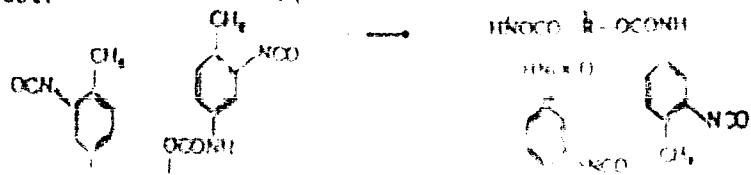
Abstract: A new polyurethane material with high oxygen resistance is described.

It is a polyurethane varnish based on glycidol ether, toluidine diisocyanate, and oxygen.

Abstract: In order to obtain more stable polyurethane varnishes based on tetrafunctional polyols and polyisocyanates, the authors synthesized epoxy ethers with terminal isocyanate groups from these polymers and toluylene diisocyanate. The reaction may be represented as follows:



ACCESSION NR. AP6016047



ENCL 2 00 4 11 1 1 5 7 8

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(N)

1-11653-66

EMT(u)/EMT(j)

RM

ACC NR. AP6001078

SOURCE CODE: UR/0303/65/000/006/0001/0006

44

B

AUTHOR: Kochmova, V. A.; Sorokin, N. F.

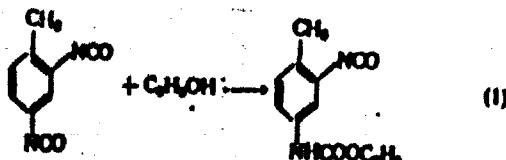
ORG: none

TITLE: Polyurethane varnishes from "blocked" isocyanates and simple polyesters

SOURCE: Lakokrasochnyye materialy i ikh primeneniye, no. 6, 1965, 1-6

TOPIC TAGS: polymer, varnish, polyurethane, polyester, hardening

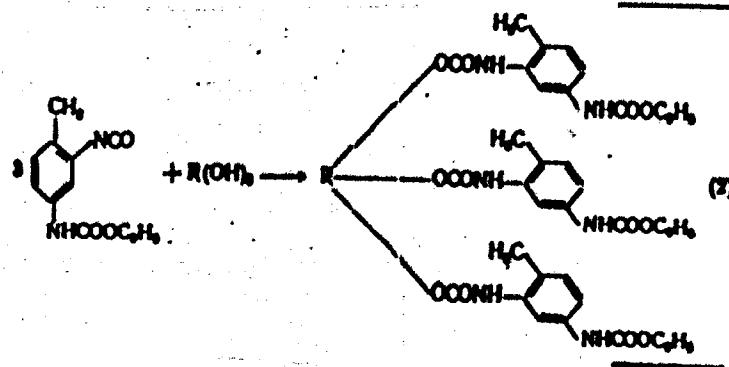
ABSTRACT: This work represents an attempt to obtain polyurethane varnishes from polymeric glycidic esters. It was desirable to impart unlimited storability to the varnishes and to prevent gelling on addition of pigments. To do so, "blocked" polyurethanes were synthesized which contained no residual free functional groups (hydroxyl and isocyanate groups). The synthesis of "blocked" polyurethanes was accomplished in two stages:



Card 1/2

UDCI 667.631.263.3

L 11653-66
ACC NR. AP6001678



where $R(OH)_3$ is polymeric alkyl or aryl glycidate. One- and two-component coatings were obtained from the "blocked" urethanes. The coatings can be hardened by heat treatment; 1.5 hours at 160C proved to be optimal conditions. The obtained films have excellent appearance, good physical and mechanical properties, and high chemical stability. Orig. art. has: 3 figures and 5 tables. [vs]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 005/ ATD PRESS: 4175

Card 2/2

KOCHINIEV, M. I.

30168

Izmyenyeniye sbobodoy enyergii i teplosoderthaniya pri pyeaktsiyash obrazovaniya
arsyenidov kobalt, zhurnal prikl. Khimii, 1949, No. 9, C. 970-77. -- Bibliogr: 6 naizv

SO: LETOPIS' NO. 34

KOCHNOWSKI, Gustaw; WISNIOWSKI, Jozef

Favorable results of glucocorticoid therapy in a pulmonary form of Besnier-Boeck-Schaumann disease. Polski tygod. lek. 15 no.28; 1071-1073 11 Jl '60.

1. Za Szpitala Pracodawcza w Pilchowicach k/Oliwic;
dyrektor: lek. med. G.Kochnowski
(SARCOIDOSIS ther)
(LUNG DISEASES ther)
(ADRENAL CORTEX HORMONES ther)

KOCHNOWSKI, Gustaw

A case of pulmonary tuberculosis complicated by acute spontaneous pericarditis. Gruslica 28 no.8:665-668 Ag '60.

1. Ze Szpitala Przeciwgruźliczego w Pilchowicach kolo Olivie
Dyrektor: lek. med. G.Kochnowski.
(TUBERCULOSIS, PULMONARY case reports)
(PERICARDITIS case reports)

KOCHNOWSKI, Gustaw; ROZEK, Gerard

Permanent cure in a case of fresh tuberculous empyema treated with
antibacterial drugs and hyaluronidase. Gruslica 29 no.12:1053-1055
D '61.

1. Ze Szpitala Przeciwgruźliczego w Pilchowicach kolo Oliwic Dyrektor:
lek. med. G. Kochnowski.

(ANTITUBERCULAR AGENTS ther) (HYALURONIDASE ther)

KOCHNOWSKI, Gustaw

Results of the treatment of recent pulmonary tuberculosis
with large doses of INH. Grunica 31 no. 3:263-266 '63.

1. Ze Szpitala Przeciwigrałniczego w Pilchowicach kolo Oliwic
Dyrektor Szpitala: lek. med. G. Kochnowski.
(ISONIAZID) (TUBERCULOSIS, PULMONARY)

KOCHNOWSKI, Gustaw; ROZEX, Gerard

Fatal gastric cancer during the treatment of pulmonary tuberculosis with antibacterial drugs and cortisone. Pol. tyg. lek. 19 no. 25:960-961 15 Je '64.

1. Za Szpitala Przeciwgruźliczego w Pilchowicach kolo Gliwic; dyrektor: lek. med. Gustaw Kochnowski.

KOCHO, DIMA, Cand Agr Sci -- (diss) "Norms and methods of irrigation of the cotton plant on meadow-swamp soils of the Chirchik River Valley." Tashkent, 1960. 16 pp; (State Committee of Higher and Secondary Specialist Education under the Council of Ministers Uzbek SSR, Tashkent Agricultural Inst); 200 copies; price not given; (KL, 26-60, 141)

SEMENENKO, P.; GUDOV, V.; SUKHMAN, L.; FADEYEV, I.; KOCHO, V., doktor
tekhn.nauk

"Steel power" by D.A.Smoliarenko. Reviewed by P.Semenenko
and others. Metallurg 8 no.1:39-40 Ja '63. (MIRA 16:1)
(Steel ingots)
(Smoliarenko, D.A.)

CA

9

Balling of the melt within the bath of a steel-making furnace. V. S. Kryuch. Sov. Pat. No. 2,354,915 (1958). A melt analysis is given of the work done by the bubbles rising through the molten metal and slag and escaping into the surrounding atmosphere. Not all the work is done on the metal and slag; the greater part is done on the atmosphere. The gas flowing through the melt is comparable to the adiabatic expansion of a gas in a cylinder with a movable piston. The work done in raising the melt is equal to the work of the adiabatic expansion of the gas on the total pressure (metal + slag) electrons to atom pressure. The heating of the melt is done at the end of the heat carried away by the escaping bubbles. This heat is but a small fraction of the total heat supplied to the bath. The heat exchange in the melt is closely connected with the work of the heating.

M. Kryuch.

BUDDING ACTION OF MOLTEN METAL IN STEEL-MELTING FURNACES. V. S. KUCHA. Henry Brothers (Alkandrov. (Cold). Translation N.I. 3007, 1948, 20 pages. From Metall (Steel), v. 3, no. 3-4, 1948, p. 56-60.

Points out certain shortcomings of H. Schenck's method for calculating the energy consumed by the above action. Develops a new method (2 variants) for the calculation and illustrates it by 2 examples. Derives a relationship between heat transfer in molten metal and the heating energy. Points out applicability of formulas to other liquids.

Ca

9

Heat transfer in a liquid bath agitated by bubbling
 M. A. Gidley and V. G. Kudryavtsev, *Ind Eng Chem Res* 1986, 25(2) (Russian). Heat transfer between fixed slugs and metal in the open-hearth process is dealt with by the heat end of the melt under conditions of quench, agitation by bubbling gas, mainly CO. The characteristic criterion is $G = \frac{V}{\gamma} \frac{\rho}{\gamma_1} \frac{\rho_1}{\rho} \frac{d}{\rho g} = \frac{V}{\gamma} \frac{\rho}{\gamma_1}$, where V = vol. of gas per unit γ , γ and γ_1 = specific wt. of liquid and of gas, resp., ρ = density of bubbles, d = horizontal section of the bath, g = acceleration const. of the liquid, H = depth of bath from which the bubbles rise. At a critical G^* the laminar flow in the bath becomes turbulent: $G^* = \frac{1}{4} \frac{\rho}{\gamma_1} Re Pr^2$, where Re = Reynolds' no., $P = \sigma^2/d$ (d = diam. of the bubbles), Pr = new criterion = V/ω . Related to G is a "virtual const. of heat end," valid under the conditions described, $\lambda' = C/\Pr$ where C = heat capacity (by wt 1) of the liquid. \Pr = Prandtl's criterion, inversely proportional to G and to powers of (ω/d) and of $(\sigma/\gamma d^2)$ where σ = surface tension of the liquid. Experimentally, dependence of λ' on V and on ω was studied on an air-bubble-stirred water and water-glycerol melt bath model, with (ω/d) and $(\sigma/\gamma d^2)$ kept const. Under these conditions, the dimensionless plot of $\log(\lambda'/C)$ against $\log G$ is a single straight line with the exp. points spreading around it. Numerical evaluation by the method of least squares gives $\lambda'/C = G^{1.0}$; that is, λ' is basically determined by the amt. of gas passing through a unit area of the cross section of the bath and by its depth. In turbulent flow, ω of the liquid has only a minor influence; thus, practically no difference was found in λ' on a 13-fold change of ω (from 43% glycerol to pure water). Industrial-scale experiments conducted on a basic and cold open-hearth slags in 60-40-ton batches, with ω measured directly and the amt. of gas derived from the rate of combustion of carbon. The equation $\lambda'/C = G^{1.0}$ is found to hold also for molten slag: λ' varies within the limits 28-92 cal / sec. m. hr. degree.

450-118 METALLURGICAL LIBRARY

MEASUREMENT OF THE TEMPERATURE OF LIQUID STEEL BATHS USING A COMBINED THERMOCOUPLE OR BY OTHER METHODS. V. S. Koshe (Zavodskaya Laboratoriya, 1946, vol. 12, no. 7-8, pp. 702-711) (in Russian)

Car

Temperature cycle of metal and slag during the run of an open-hearth furnace. Y. B. Karber. (Ref 7, 22B-141947). — This temp. study was carried out in 3 basic tilting furnaces and in a stationary acid furnace. The furnaces operated on a solid scrap charge. The temps. measured were those of the metal, surface of slag with the flame out, and liquids along the Fe-C diagram. Also recorded were the change in C content in the molten product and the rate of C combustion. The purpose was to establish the optimum temp. schedule for developing a melt. The results are recorded on curves and are divergent.

M. Haub

9

Ind. Industrial Int.

410-114 METALLURGICAL LITERATURE CLASSIFICATION

1940-1949 1950-1959 1960-1969 1970-1979

CA

7

Temperature of metal and carbon content along the depth of an open hearth. V. B. Kostylev and T. G. Toli (1947). - The temp. and the C content of the metal were determined on the floor and at the surface (under the slag) of a 20-ton basic hearth 700 mm. deep. Preliminary tests showed that on the floor the temp. of the metal differed very little throughout the bath. When, for some reason, the bath cooled, a temp. gradient of up to 45° per m. was observed and the C content varied 0.14-0.19%. At a normal run, the temp. gradient did not exceed 15° per m. and the C content did not vary more than 0.10-0.04%. Normal run can be assured by intense stirring of the melt, which depends largely on the rate of decarburization, depth of bath, and temp. and viscosity of metal, all of which is done, by the intensity of heating (cf. C.A. 41, 2827). Increasing depth of bath impedes circulation of melt. In the finishing period the temp. of the metal should be 20-25° and before tapping 30-35° above the liquidus line. This is necessary to provide a reserve of heat to balance the heat losses during tapping, keeping in bath, and tapping. M. Ilich

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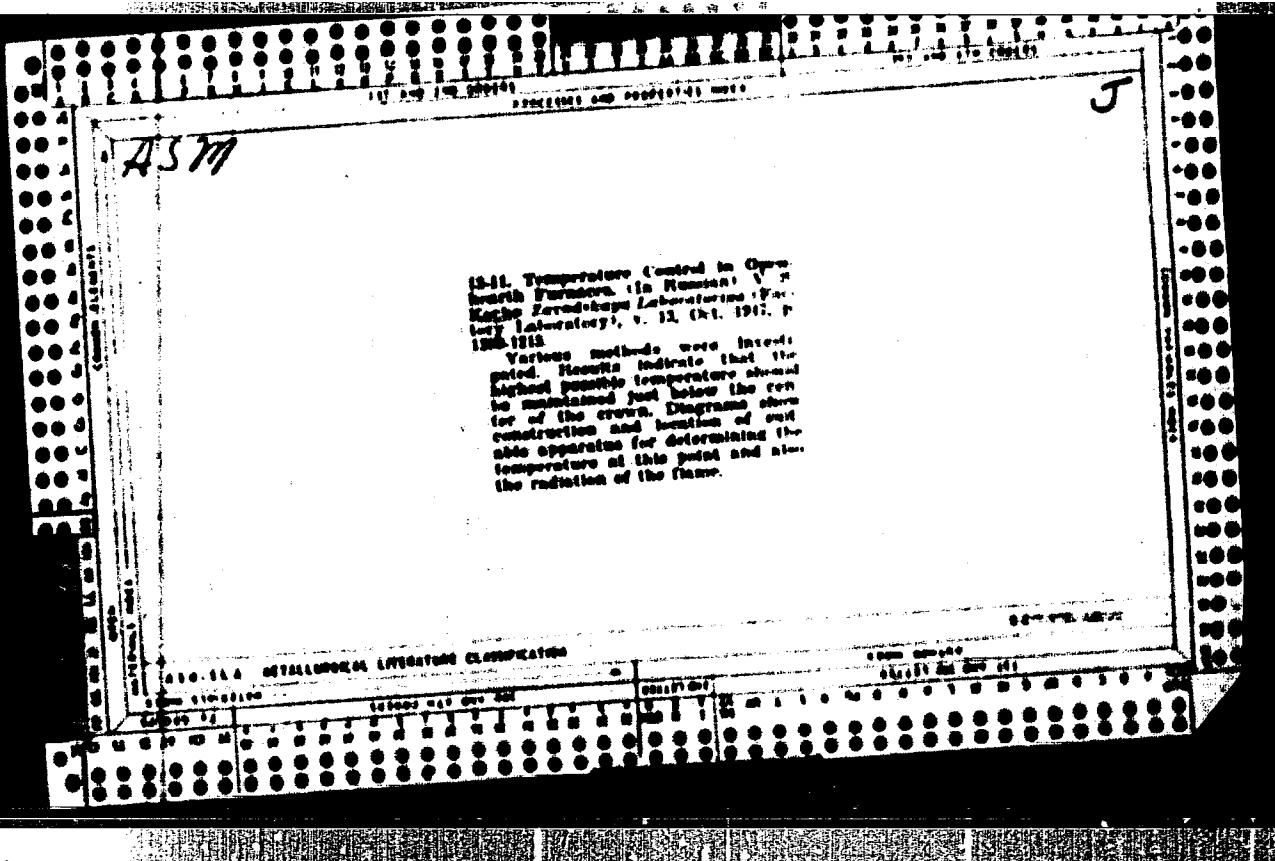
CA

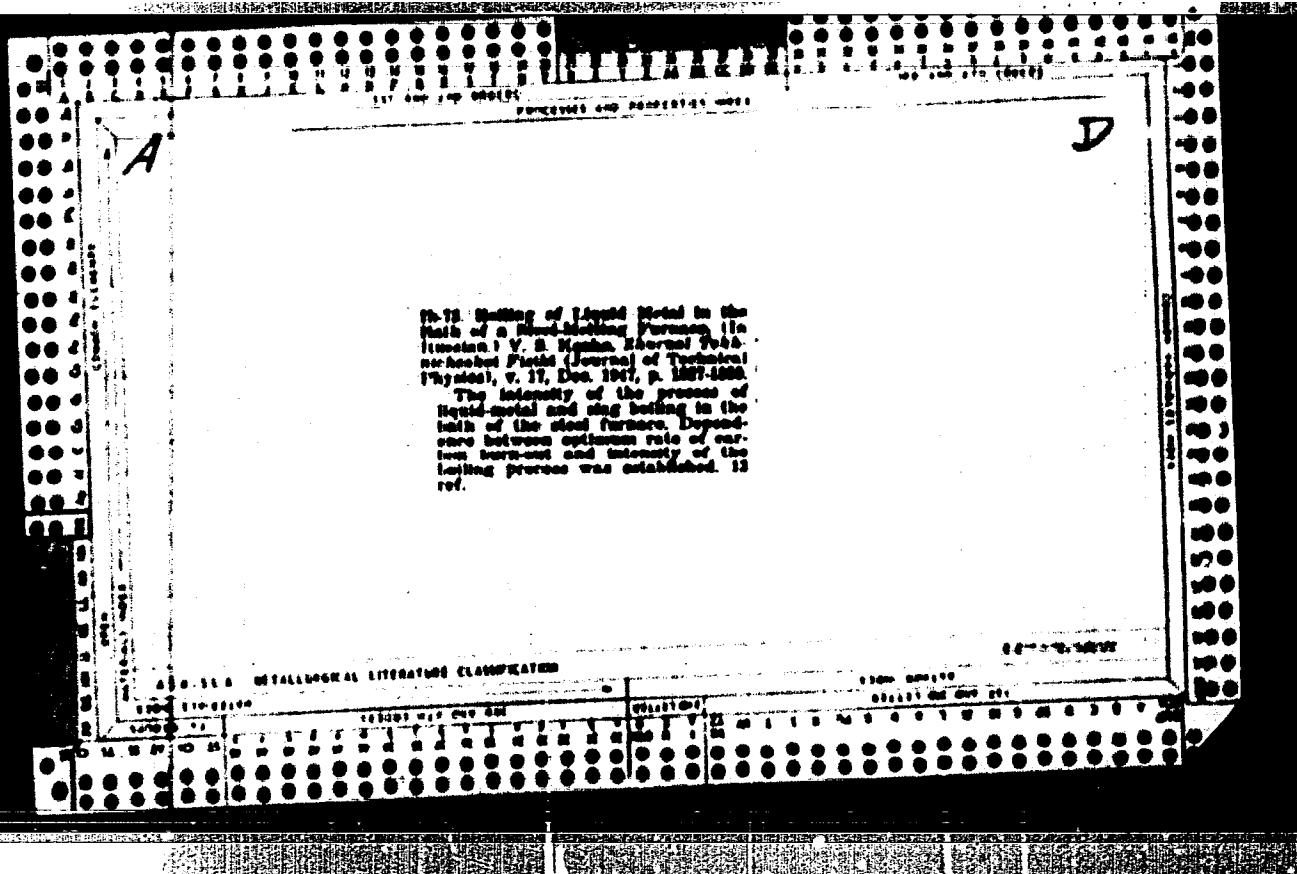
9

Thermocouple for liquid steel. *V. M. Kucher, Zvezd*
skaya Lab. 10, com 9(1947).—A high-*al.* construction of
a Pt-PtRh thermocouple, buried in a heat steel tube, is
used in measurement.
N. Tsvet

APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000723520012-9"





KOCHO, V.S.

35291. Elektricheskaya gibkaya bveratnaya svyaz, V SB:50 Let Kievsk
politekho. In-Ta Kiev, 1948 S. 527-34 Bibliogr: 5 Nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, 1949 Moskva

KOCHO, V. S.

Kocho, V. S. "Decarbonization rate and intensity of the
boiling cauldron in the open-hearth furnace," *Investiya*
Kiyevsk. politekhn. in-ta, Vol VIII, 1948 (on cover: 1949),
p. 179-93; - Bibliogr: 18 items

SO: U-5241, 17 December, 1953, (*Letopis' Zhurnal'nykh Statey*, no. 26, 1949)

94

The viscosity of the vapors of the class A. I. are to be expected to increase with the temperature, as the viscosity of the vapors of the class A. II. does, rising through a maximum of liquid of the height H , up to 10° of constant density, undergoes an increase that occurs at 10° of constant density, and the maximum therefore is a horizontal vapor. The viscosity of the vapors of the class A. II. is to be expected to increase with the temperature, as the viscosity of the vapors of the class A. I. due to continuing heat exchange between the gas and the liquid. Hence, in H_2O and in air at 10° , observed the result, $\eta = \log \eta_1 + (A_1/\eta_1) \log \eta_1 + (A_2 H_1)/\eta_1 + A_3$, A_1 to increase with the initial density of the vapor, and not to exceed 1.423 ; this means that the process is very nearly isothermal.

KOCHO, V. S.

KOCHO, V. S. -- "Investigation of Heat (Thermal) Processes in the Bath of a Steel Furnace." Sub 7 Oct 52 Inst of Metallurgy (cont'd.)

APPROVED FOR RELEASE: 09/18/2001 (MAILED 09/18/2001)
Sub 7 Oct 52, Inst. of Metallurgy, Dept. of
Metallurgy, Aeronautical Engg. & Space Sciences,
University of Michigan (Dissertation for the Degree of Candidate
in Technical Sciences).

SO: Vechernaya Moskva, January December 1952

KOCH, V. S.

Metallurgy - Steel, Technology, Processes

Jul 92

"Temperature Conditions of Metal and Slag, and Heat Flow in Steel-Melting Electric Furnaces," V. S. Koeho

228687
"In Ak Hawk, Otdel Teplo Hawk" № 7, № 1045-1060

Investigates variations in temps of metal and slag, PA and flows of heat in basic elec-arc furnaces of 25-ton capacity to establish optimum elec conditions of furnace operation and to improve technological process of steelmaking. Establishes among other

228687

factors that rate of heat absorption during HP is 2-3 times greater than during boiling and refining. Possible shortening of last 2 periods contributes to increase of furnace efficiency. Demonstrates expediency of using immersed thermocouples for process control. Submitted by Acad I. P. Berlin

19 Jan 92.

228687

"APPROVED FOR RELEASE: 09/18/2001

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APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000723520012-9"

KOCHO, V.S., professor, doktor tekhnicheskikh nauk

"Industrial measurement of the temperature of liquid iron alloys."
Zav.lab.22 no.7:883-885 '56.
(Thermocouples) (Iron--Metallurgy) (MLB4 9:12)

DANIKHELSA, A., doktor, inzh.; MIKHAYLOV, O.A., kand. tekhn. nauk; GONCHARENKO, N.I.; KLYMASENKO, L.S.; CYKS, G.N., prof., doktor tekhn. nauk; SUDOMSKIY, P.P.; MOROZOV, A.N., prof., doktor tekhn. nauk; GLINKOV, M.A., prof., doktor tekhn. nauk; KALANTSEV, I.O., prof., doktor tekhn. nauk; KOCHU, L.A., prof., doktor tekhn. nauk; BUKHACHEV, M., kand. tekhn. nauk; MOKHOVSKIY, L.I., kand. tekhn. nauk; GURSKYIY, O.V.; SPERANSKIY, V.G.; NOVIK, L.N., kand. tekhn. nauk, starshiy nauchnyy sotrudnik; SHMYTEROV, Ya.A., kand. tekhn. nauk; PAPUSH, A.G., kand. tekhn. nauk; MAZOV, V.P.; SAMARIN, A.M.

Discussions. Bul. TSVIICH no.18/19:17-35 '57. (MIRA 11:4)

1. Glavnyy staleplavil'shchik Ministerstva metallurgicheskoy promyshlennosti i rudnikov Cheskoslovatskoy respubliki (for Danikhelsa). 2. Direktor Tsentral'nogo instituta informatsii chernoy metallurgii (for Mikhaylov). 3. Direktor Ukrainskogo instituta metallov (for Goncharenko). 4. Glavnyy staleplavil'shchik Khmetalskogo metallurgicheskogo kombinata (for Klymaisenko). 5. Zaveduyushchiy kafedroy metallurgii stali Moskovskogo instituta stali (for Cyks). 6. Zamstittel' glavnogo inzhenera zavoda im. Serova (for Serevantsa). 7. Zaveduyushchiy kafedroy metallurgii stali Chelyabinskogo politekhnicheskogo instituta (for Morozov). 8. Zaveduyushchiy kafedroy metallurgicheskikh pechey Moskovskogo instituta stali (for Glinkov). 9. Zaveduyushchiy kafedroy metallurgii stali Endanovskogo metallurgicheskogo instituta (for Kazantsev). 10. Zaveduyushchiy kafedroy metallurgii stali Kiyevskogo politekhnicheskogo instituta (for Kochu). (Continued on next card)

DANILOVKA, A.---(continued) Card 2.

11. Nachal'nik tekhnicheskogo otdela Ministerstva chernoy metalurgii Vengrskoy Narodnoy Respubliki (for Nachsch). 12. Zemsttel' direktora Novotul'skogo metallurgicheskogo zavoda (for Gurakiy). 13. Nachal'nik tekhnicheskogo otdela zavoda "Dneprospetsstal'" (for Speranskiy). 14. Institut metallurgii im. Baykova AN SSSR (for Novik). 15. Nachal'nik staleplavil'noy laboratori Ukrainskogo instituta metallov (for Shneyerov). 16. Nachal'nik laboratori po nepreryvnoy rasplivke stali Zhdanovskogo filiala Tsentral'nogo nauchno-issledovatel'skogo instituta Ministerstva stroitel'stvo promyshlennosti (for Papush). 17. Nachal'nik zarenovskogo tselka zavoda "Zaporozhstal'" (for Masov). 18. Zemsttel' direktora Instituta metallurgii im. Baykova AN SSSR, chlen-korrespondent AN SSSR (for Samarin).

(Steel-Metallurgy)

KHODAKOVSKIY, V.V.; YEFIMOV, V.A., kand. tekhn. nauk, starshiy nauchnyy rabotnik; KOSENKO, P.Ye., kand. tekhn. nauk; KAZAKOVICH, S.S.; LAPITSKIY, V.I., prof., doktor tekhn. nauk; FILIP'YEV, O.V.; STROGOV, A.I., kand. tekhn. nauk, dots.; DEMIDOVICH, A.V.; BORNATSKIY, I.I., kand. tekhn. nauk; MIDEHEDOZHSKIY, N.Ya., dots.; KOGOZ, V.S., prof., doktor tekhn. nauk; RYBKOV, V.I.; LOMAKIN, L.N., mladshiy nauchnyy sotrudnik; KOKAREV, N.I., dots.; KLYUCHAREN, A.P.; PLYUSCHENKO, Ye.A.; KAPUSTIN, Ye.A., kand. tekhn. nauk, dots.; KOBZIK, I.I., kand. tekhn. nauk, nauchnyy sotrudnik; SHIROKOV, G.I.; UGRISHIN, P.V., prof., doktor tekhn. nauk; LUKHAVA, K.I.; ZHIGULIN, V.I.; MOROKOV, P.N.; KHLIENNIKOV, A.Ye., prof., doktor tekhn. nauk, starshiy nauchnyy sotrudnik; TARASOV, E.S.; NIKOLAEV, A.G.

Discussions. Biul. TSVIICHM no.18/19:40-66 '57. (MIRA 11:4)

1. Starshiy inzhener Glavspetsstali Ministerstva Chernicy metallurgii SSSR (for Khodakovskiy).
2. Institut gaza (for Yefimov).
3. Direktor Dneprodershchinskogo metallurgicheskogo instituta (for Kosenko).
4. Nachal'nik laboratorii leningradskogo instituta ogneuporov (for Kasakovich).
5. Zaveduyushchiy kafedroy metallurgii stali Dnepropetrovskogo metallurgicheskogo instituta (for Lapitskiy).
6. Nachal'nik laboratorii Giprostali (for Filip'yev).
7. Chelyabinskii politekhnicheskiy institut (for Stroganov).
8. Nachal'nik teplotekhnicheskoy laboratorii Severskogo metallurgicheskogo zavoda (for Demidovich).
9. Zamestitel' nachal'nika Tsentral'nyy zavodskoy laboratorii Maksevskogo metallurgicheskogo zavoda (for Bornatskiy).

(Continued on next card)

KHODAKOVSKIY, V.V.---(continued) Card 2.

10. Sibirskiy metallurgicheskiy institut (for Medzhiboshakiy).
11. Zaveduyushchiy kafedroy metallurgii stali Kiyevskogo politekhnicheskogo instituta (for Kocho). 12 Ispolnyayushchiy obyazannosti glavnogo inzhenera Beloretskogo metallurgicheskogo kombinata (for Ryn'kov). 13. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki (for Lomakin). 14. Ural'skiy politekhnicheskiy institut (for Kokarev). 15. Zamstitel' nachal'nika teplotekhnicheskoy laboratorii Nizhne-Tagil'skogo metallurgicheskogo kombinata (for Klyucharev). 16. Nachal'nik teplotekhnicheskoy laboratorii Tsentral'noy zavodskoy laboratorii zavoda im. Voroshilova (for Flyushchenko). 17. Zhdanovskiy metallurgicheskiy institut (for Kepustin). 18. Institut metallurgii im. Baykova AN SSSR (for Kobza). 19. Nachal'nik laboratorii martenovskikh pechey Vsesoyuznogo nauchno-issledovatel'skogo instituta metallurgicheskoy teplotekhniki (for Shirokov). 20. Zaveduyushchiy kafedroy metallurgii stali Ural'skogo politekhnicheskogo instituta (for Uarikhin).
21. Nachal'nik metallurgicheskoy laboratorii Tsentral'noy zavodskoy laboratorii Zakhavinskogo metallurgicheskogo zavoda (for Leshava).
22. Zamstitel' glavnogo inzhenera zavoda im. Petrovskogo (for Zhigulin). 23. Nachal'nik martenovskogo tschka Kuznetskogo metallurgicheskogo kombinata (for Morokov). 24. Institut metallurgii im. Baykova AN SSSR (for Zheleznikov). 25. Glavnyy inzhener Petrovsk-Zabaykalskogo metallurgicheskogo zavoda (for Tarasov). 26. Nachal'nik tschka Magnitogorskogo metallurgicheskogo kombinata (for Nikolayev).

(Open-hearth process)

KOCHO, V.S., prof., doktor tekhn. nauk; GRANKOVSKIY, V.I., inzh.; MOLCHANOV,
Iu.D., inzh.; PLOSECHENKO, Ye.A., inzh.

Heating open-hearth furnaces of 500 ton capacity with hot coke gas.
Bul. TSMICHEN no.1:11-15 '58. (NIRA 11:5)
(Open hearth furnaces)

SOV/137-58-10-20563

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 31 (USSR)

AUTHORS: Koch, V.S., Granovskiy, V.I., Ploshchenko, Ye.A.TITLE: An Investigation of the Thermal Functioning of Open-hearth
Furnaces in Which Compressed Air is Delivered in the Checker
Port (Issledovaniye teplovoy raboty martenovskikh pechey.
rabotayushchikh s podachey shatogo vozdukha v golovki)PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Chernaya metallurgiya.
1958, Nr 1, pp 112-116ABSTRACT: 4000-4500 m³ compressed air from blast-furnace turbo-
blowers is delivered per hour into the ends of the gas tank of
the 220-t ovens at the Voroshilovsk Metallurgical Plant. The
employment of compressed air improves the fuel combustion
process, thus making it possible to reduce the excess-air
coefficient from 1.5-1.8 to 1.05-1.15. Heating of the gas
checkers is increased by 100-150°C. The tank-lining life is
increased from 80 to 200 heats, and dust loss is reduced. The
slag pockets require cleaning every 280-350 instead of 130-160
heats. The rate of C burn-off during the finishing period is 8
to 15% greater. When compressed air is employed, the melting

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SOV/137-58-10-20563

An Investigation of the Thermal Functioning of Open-hearth Furnaces (cont.)

period is 20 minutes shorter, and the working period 13 minutes. The unit consumption of fuel, in conventional units, is 13% less. Delivery of compressed air makes it possible to maintain higher heat inputs and obtain higher output rates from the furnaces. The heat intake of the bath rises by 40-60% with an air consumption of 2000 m³/hr, and even more at 4500 m³/hr. In the second half of the furnace, heat absorption declines when air is supplied, sometimes going to values close to zero. For a 250-500-t furnace, the optimum compressed-air delivery is 3000-5000 m³/hr; the precise amount requires determination by experiment in each individual instance.

G.G.

1. Open hearth furnaces--Operation
2. Open hearth furnaces--Thermodynamic properties
3. Oxygen--Applications

Card 2/2

130-58-2-6/21

AUTHORS: Kocho, V.S., Doctor of Technical Sciences, Professor,
Orankovskiy, V.I., Molchanov, Yu.D. and Ploshchenko, Ye.A.

TITLE: Open-hearth Furnace Operation on High-calorific Value Low-pressure Gas (Rabota martenovskikh pechey na vysokokalorilnym goryachem gaze nizkogo davleniya)

PERIODICAL: Metallurg, 1958, Nr 2, pp 9 - 12 (USSR).

ABSTRACT: Blast-furnace gas is normally added to coke-oven gas for firing open-hearth furnaces to improve flame quality. The low calorific value of blast-furnace gas, however, lowers the theoretical flame temperature and an investigation has been carried out by the imeni Voroshilova (imeni Voroshilov) metallurgical works together with the Kiyevskiy politekhnicheskiy institut (Kiev Polytechnical Institute) of furnace firing without the addition. The authors mention this work in which pure coke-oven gas was used with the addition of turbine air into the side of the gas port and describe the adoption of practice with reduced (halved) quantities of blast-furnace gas which followed the completion of the first part of the work. On 250 and 500-ton furnaces, the blast-furnace gas consumptions were 3 000 and 4 500 m³/hour, respectively, the coke-oven gas consumptions remaining unchanged and the specific fuel consumption being equivalent to the decrease in blast-furnace

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130-58-2-6/21

Open-hearth Furnace Operation on High-calorific Value Low-pressure Gas

gas consumption. By increasing the port cross-sections, an equally high temperature (about 1 350 °C) was obtained for gas and air checkers. The slag pockets filled less rapidly, a higher furnace temperature and increased heat flows were obtained with the new practice: measurements with VNIIT-designed probes on a 500-ton furnace are shown graphically. Three experimental heats were carried out on a 500-ton furnace without blast-furnace gas and the averages of the main operating results for this and ordinary operation are tabulated (Table 1): the authors discuss these briefly and point out that there seems to be an optimal gas pre-heat temperature. They consider the functioning of the gas checkers with pure coke-oven gas. A failure of the lining of the gas ports on a 500-ton furnace led to the combustion products losing enough heat to prevent overheating of the gas checkers and the furnace was worked on coke-oven gas continuously for 1 1/2 months. The operating results show (Table 2) mean decreases of 0.7 hours and 21.8 kg/ton for tap-to-tap time and consumption of standard fuel, respectively. The authors recommend the coke-oven gas firing of furnaces without blast-furnace gas, the cross-sectional area of the gas ports being reduced to reduce the flow of combustion products

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